Summary Report

THE NATIONAL HIGH BLOOD PRESSURE EDUCATION PROGRAM COORDINATING COMMITTEE MEETING

April 16, 1999
Sheraton Reston Hotel
Reston, Virginia

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WELCOME AND INTRODUCTION OF NEW MEMBERS
[Dr. Edward Roccella]

Dr. Roccella convened the meeting at 8 a.m. and introduced one new member of the National High Blood Pressure Education Program (NHBPEP): Dr. Leonard Steiner, of the American Optometric Association.

Five substitute representatives were introduced:

- Dr. Charles Curry, of the American College of Cardiology.
- Ms. Colleen O'Malley, of the American Society of Hospital Pharmacists.
- Dr. David Hyman, of the American College of Preventive Medicine.
- Dr. Sharon Saunders, of the Association of Black Cardiologists.
- Dr. Paul Kimmel, of the National Institute of Diabetes and Digestive and Kidney Diseases.

It was announced that this would be the final attendance of Dr. Jerzy Gajewski, representative of the American Academy of Insurance Medicine. Dr. Gajewski has been an ardent supporter of the NHBPEP and was thanked for his service. It was also noted that Dr. Michael Horan has retired from the Public Health Service.

May is National High Blood Pressure Education Month; the high blood pressure education kit has been placed on the NHLBI Web site (www.nhlbi.nih.gov) and has been distributed to community groups (40,000 copies) for use in this month's activities.

CONSIDERATIONS IN PREDICTING CARDIOVASCULAR RISK: SYSTOLIC, DIASTOLIC, AND PULSE PRESSURE
[Dr. Daniel Levy]

Dr. Levy discussed diastolic and systolic blood pressures both in the classification of hypertension and the prediction of cardiovascular events. Diastolic and systolic blood pressures often are discordant, yet researchers have not quantitated the degrees of such disparities. A better understanding of this discordance may assist in understanding the low rates of blood pressure control in the United States.

Dr. Levy reviewed the distribution of blood pressure stages among adults who were not on treatment in the Framingham study for 1990 to 1995. He and co-workers noted especially cases of upstaging—that is, cases of one of the blood pressures (systolic or diastolic) rising significantly in the absence of a similar rise in the other pressure. As a result, the researchers found that when systolic blood pressure alone was used as the diagnostic measure, diagnoses conformed well to diagnoses based on both diastolic and systolic; when diastolic blood pressure alone was used as the diagnostic measure, the diagnoses conformed much less well to diagnoses based on both diastolic and systolic pressures. Systolic pressure alone correctly classified 96 percent of individuals; diastolic alone correctly classified 68 percent of individuals. Systolic blood pressure rising out of proportion to the rise in diastolic blood pressure is common. In fact, once systolic pressures are considered, diastolic pressures exhibit an inverse relationship to coronary events.

Dr. Levy noted that pulse pressure rises most with age and is most strongly associated with coronary heart disease risk and congestive heart failure risk. In conclusion, he stated that all three pressures are predictors of cardiovascular events, and pulse pressure is the best predictor. He made the following recommendations:

- Study discordant blood pressures.
- Consider whether discordant pressures, especially in the elderly, may explain low rates of blood pressure control.
- Acknowledge, in future guidelines, the greater role of systolic blood pressure in determining blood pressure stage, eligibility for therapy, risk for cardiovascular disease, and benefits of treatment.
- Use pulse pressure to help identify patients at high risk for cardiovascular disease and who are candidates for aggressive treatment.
- Acknowledge, in future guidelines, the predictive role for pulse pressure.
- Perform research to establish treatment implications of high pulse pressures.

PANEL DISCUSSION: WHAT IS THE UTILITY OF SBP VS. DBP VS. PULSE PRESSURE?
[Ms. Kathleen McPhaul, moderator, with Dr. Joseph Izzo, Dr. Jerome Cohen, and Dr. Jeffrey Cutler]

Ms. McPhaul introduced Dr. Izzo, who reviewed the pathophysiology of hypertension. Dr. Izzo stressed that physicians should inform patients of this pathophysiology in ways the patient may understand. He described differences in the pathogenesis of hypertension in younger and older persons. In the former, high stroke volume is mainly responsible for increased pressures; in the latter, arterial stiffness is responsible. The reflective wave theory states that pulse waves—moving faster than blood itself moves—can rebound against arterial blockages or narrowing, leading to increased systolic blood pressure.

Dr. Izzo listed the following cardiac effects of increased blood pressure:

- For systolic pressure, increases in impedence, wall tension, and oxygen consumption

- For diastolic pressure, an indirect impedence and smaller effect on oxygen consumption and better coronary perfusion

Consequences of arteriosclerosis include impairment of arterial pressure sensors, increased capillary pulse, and more. In conclusion, Dr. Izzo stated that because systolic hypertension is associated with arterial stiffness, systolic blood pressure is a better indicator of risk for coronary events.

Dr. Cutler questioned the ability of pulse pressure to provide better information about coronary events. In particular, he noted that pulse pressure has not been considered as a component of management strategies, so that its adoption could be problematic. Age effects and education are issues that must be considered.

Dr. Cohen echoed Dr. Cutler's remarks and stated the need to control systolic blood pressure. Systolic blood pressure has been established as a predictor of heart disease and stroke risk. It would be difficult to treat a pulse pressure. Dr. Cohen added the important message that rising systolic pressure with age is not normal and should not be considered normal.

Ms. McPhaul asked how the current reliance on diastolic blood pressure came about. Dr. Moser recalled reading about a 1905 effort by professionals to move away from reliance on systolic pressure to reliance on diastolic pressure.

Dr. Jones noted that for African Americans, it is important to measure an early increase in diastolic blood pressure. Dr. Izzo stated that in the Hypertension Optimal Treatment (HOT) trial one witnesses no change in pulse pressure; systolic pressure therefore is important. Dr. Levy stressed that although pulse pressure may help identify those at high risk, its value for treatment is not known.

INADEQUATE MANAGEMENT OF BLOOD PRESSURE IN A HYPERTENSIVE POPULATION
[Dr. Daniel Berlowitz]

Dr. Berlowitz described the methods and results of his study of management of high blood pressure in a population in New England Veterans Hospitals. The study, which was published in the *New England Journal of Medicine*, December 31, 1998, demonstrated that a majority of patients with hypertension are under suboptimal control. Improving management of blood pressure is an important public health goal.

Dr. Berlowitz stressed that we need to improve the *process* through which hypertensive care is given, especially the process leading to the use of medications. Much of the past efforts to improve control have focused on access to medical care and medications. Dr. Berlowitz and co-workers focused on the process of control, developing a method for linking (1) process measures and (2) outcome measures, leading to a more aggressive monitoring and management of hypertension in patients.

The researchers studied how clinicians decide on treatment and developed a "treatment intensity score." Outcome measures included blood pressures and changes in blood pressures. As a result, they found that increases in therapy were associated with the following: measurement of increased levels of systolic and diastolic pressures, changes in therapy at preceding visits, presence of coronary artery disease (for patients with pressure greater than 165/90 mm Hg), and a scheduled visit.

PANEL DISCUSSION: HYPERTENSION CONTROL RATES IN THE UNITED STATES
[Ms. Nancy Houston Miller, moderator, with Dr. Lee Green, Dr. Barry Hyman, and Dr. H. Mitchell Perry]

Ms. Miller cited a history of blaming the patient for suboptimal blood pressure control. Dr. Green asked whether a problem is that patients do not realize a problem exists. It is important that we make changes in practice based on evidence. The patient-physician relationship should not be disrupted; it is important for reducing patients' misperceptions about side effects of medications. Dr. Hyman stated that, nevertheless, the public is quite knowledgeable about hypertension.

Dr. Perry said that, as a result of Dr. Berlowitz's study, the U.S. Department of Veterans Affairs has decided to investigate how to improve the care of patients with hypertension.

Dr. Sheps remarked that the sites studied by Dr. Berlowitz were specialty sites, and Dr. Gifford noted that these sites could be expected to feature higher blood pressure rates. Dr. Ferdinand added that blood pressure control should be consumer-driven.

Dr. Izzo recommended that (1) physicians increase their understanding of medications, prescribe drugs in combination or higher doses, and give more time to patients, (2) a person's care not be fragmented by visits to a number of physicians, and (3) we need to better educate the public.

NEW INFORMATION ON END-STAGE RENAL DISEASE
[Dr. Michael Moore]

Dr. Moore recounted the history of the collaboration between the NHLBI and the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) on end-stage renal disease (ESRD) and hypertension. He felt it was laudable for both groups to work together. Such efforts helped lead to the HP2000 goal of reducing by 25 percent the incidence of ESRD using hypertension treatment. Other accomplishments included adding "kidney failure" to the list of hypertension sequalae and informing the public and physicians that high blood pressure is a major cause of kidney disease.

In recent years, the incidence of ESRD has continued to grow but less rapidly. ESRD resulting from hypertension has shown a flattening since 1990. The reasons for the latter trend

are not clear; they may include the advances made using newer classes of antihypertensive medications, such as ACE inhibitors. Dr. Moore concluded by saying that much more needs to be done.

In followup questioning, committee members focused on problems that remain. Dr. Cohen remarked that problems of artifacts/labeling plague the examination of ESRD and hypertension data. Dr. Izzo pointed out that nearly every ESRD patient is hypertensive.

THE HEDIS HYPERTENSION MEASURE
[Dr. Earl Steinberg]

Dr. Steinberg reported that the National Committee for Quality Assurance (NCQA) recently completed pilot testing of the new Health Plan Employer Data and Information Set (HEDIS) measure for hypertension. The measure passed and was approved by NCQA. The measure will become part of the revised program of more than 50 HEDIS measures—used to evaluate health care organizations—that will become operational in 2001.

The hypertension measure requires health care plans to determine the number of persons with hypertension in the plan whose blood pressure has been controlled to less than 140/90 mm Hg. The measure applies only for persons with hypertension, and it does not measure diagnoses. This and other HEDIS measures increase accountability of health plans by providing standardized measures used by all. Dr. Steinberg reviewed fine points of the new measure, involving relevant populations and aspects of measurement.

Dr. Steinberg stated that the next steps in the process are (1) to assist health plans in implementing the new measures, (2) to assist health plans in managing hypertension, and (3) to expand the program to settings other than managed care.

Mr. Todd Greenwald then described "The Hypertension Registry," a Web-based tool for collecting and reporting national data on high blood pressure. He described how clinicians will be able to access the Web site, insert information about patients' hypertension, and access summary data. The tool is still being developed, and more options may be added. It will contain measures that safeguard patients' privacy.

REPORT OF THE WORKING GROUP ON HIGH BLOOD PRESSURE IN PREGNANCY
[Dr. Ray W. Gifford, Jr.]

Dr. Gifford reported that the Working Group on High Blood Pressure in Pregnancy met in February to review further the group's draft report on hypertension and pregnancy. The draft report will be circulated this summer to Coordinating Committee members, who will make final recommendations leading to a final draft.

REPORT ON THE SCIENCE BASE SUBCOMMITTEE ACTIVITIES
[Dr. Sheldon Sheps]

Dr. Sheps reported on the meeting held by the Science Base Subcommittee on the previous day. Dr. Epstein had presented conclusions of three trials of calcium-antagonists used in treatments of persons with diabetes—all of which found no adverse effects. As a result, it was suggested that the Coordinating Committee need not change its recommendations in the sixth report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC VI). Dr. Cohen summarized January's meeting on salt and blood pressure. At that meeting, participants decided that a new trial of controlled sodium intake was not feasible; also, they agreed that the food industry was a key player in implementing national policy about salt. Dr. Cohen will head an effort to revise the 1995 NHBPEP sodium statement. Dr. Hyman reported on recent studies that concluded (1) it was difficult to reduce blood pressures to less than 140 mm Hg (Houston study), (2) physicians familiar with guidelines treat hypertension more aggressively, and (3) many patients with hypertension lack a diagnosis.

The Science Base Subcommittee will discuss a number of documents in the near future, including results of a survey of physician knowledge and attitudes and data on the DASH2 (Dietary Approaches to Stop Hypertension) diet.

REPORT ON PROGRAM ORGANIZATION, LONG-RANGE PLANNING, AND, PROFESSIONAL, PATIENT, AND PUBLIC EDUCATION SUBCOMMITTEES ACTIVITIES
[Dr. Keith Copelin Ferdinand]

Dr. Ferdinand reported on the previous day's meeting of the Program Organization, Long-Range Planning, and Professional, Patient, and Public Education subcommittees.

Subcommittee members discussed the ongoing revision of the Healthy People 2010 objectives, agreeing that certain goals should include the elimination, not simply the reduction, of diseases. Goals focusing on "better than the best" as they relate to quantitative improvements over baselines were discussed.

Dr. Ferdinand reported that the committee drafting the NHLBI Ad Hoc Minority Committee report had met and discussed various issues, such as disparities in stroke incidence for whites and blacks and the changing pattern of the U.S. Stroke Belt. The Ad Hoc Committee discussed Cardiac Health Net, an online resource for the African American community and physicians who treat African Americans. This activity involves reviving the educational materials of the National Physicians Network, a collaboration of NHLBI, the National Medical Association, and the Association of Black Cardiologists. The new Web site will offer the materials and accept feedback from users. The site will also offer continuing education for

physicians. The collaboration now includes the National Black Nurses Association and a number of historically black colleges and universities.

CONCLUDING REMARKS
[Dr. Edward Roccella]

Dr. Moser announced that the new *Journal of Clinical Hypertension* will begin publishing in July. Its creators hope the new journal will reach a large audience of primary care doctors. Dr. Roccella announced future NHBPEP Coordinating Committee meeting dates:

- January 20–21, 2000
- September 21–22, 2000.

The meeting was adjourned at 1 p.m.

ATTACHMENT A

Participant List

Participant List

National High Blood Pressure Education Program (NHBPEP) Coordinating Committee Meeting

Members Present

American Academy of Family Physicians	Lee A. Green, M.D., M.P.H.
American Academy of Insurance Medicine	Jerzy Gajewski, M.D., Ph.D.
American Academy of Ophthalmology	Barry N. Hyman, M.D.
American Academy of Physician Assistants	John J. Davis, P.A.-C.
American Association of Occupational Health Nurses	Kathleen McPhaul, M.P.H., R.N.
American College of Cardiology	Charles Curry, M.D.
American College of Chest Physicians	Sheldon G. Sheps, M.D.
American College of Physicians	Jerome D. Cohen, M.D.
American College of Preventive Medicine	David Hyman, M.D.
American Dental Association	Michael Glick, D.M.D.
American Diabetes Association, Inc.	James R. Sowers, M.D.
American Dietetic Association	Mary C. Winston, Ed.D., R.D.
American Heart Association	Daniel W. Jones, M.D.
American Medical Association	Ray W. Gifford, Jr., M.D.
American Nurses Association	Nancy Houston Miller, B.S.N.
American Optometric Association	Leonard Steiner, O.D.
American Osteopathic Association	William A. Nickey, D.O.
American Podiatric Medical Association	Pamela J. Colman, D.P.M.
American Public Health Association	Stephen Havas, M.D., M.P.H., M.S.
American Society of Hospital Pharmacists	Colleen O'Malley, M.S., R.Ph.
Association of Black Cardiologists	Sharon Saunders, M.D.
Citizens for Public Action on High Blood Pressure and Cholesterol, Inc.	Gerald Wilson, M.A., M.B.A.
Council on Geriatric Cardiology	Joseph L. Izzo, Jr., M.D.
National Black Nurses' Association, Inc.	Rita Strickland, Ed.D., R.N.
National High Blood Pressure Education Program	Marvin Moser, M.D.
National Hypertension Association, Inc.	William Manger, M.D., Ph.D.

National Kidney Foundation, Inc.	Murray Epstein, M.D.
National Optometric Association	Edwin Marshall, O.D., M.P.H.
National Stroke Association	Harold W. "Pete" Todd
NHLBI Ad Hoc Committee on Minority Populations	Keith C. Ferdinand, M.D., F.A.C.C.
Society for Nutrition Education	Kathryn M. Kolasa, Ph.D., R.D.

Federal Agencies Present

Agency for Health Care Policy and Research	Francis D. Chesley, Jr., M.D.
Department of Veterans Affairs	H. Mitchell Perry, Jr., M.D.
Health Care Financing Administration	Jay Merchant, M.H.A.
Health Resources and Services Administration	David B. Snyder, R.Ph., D.D.S.
National Center for Health Statistics	Vicki Burt, R.N., Sc.M.
National Heart, Lung, and Blood Institute	Edward J. Roccella, Ph.D., M.P.H.
National Institute of Diabetes and Digestive and Kidney Diseases	Paul L. Kimmel, M.D.

Members Absent

American Academy of Neurology	Jack P. Whisnant, M.D.
American College of Occupational and Environmental Medicine	Ron Stout, M.D.
American Hospital Association	Roxane Spitzer, Ph.D.
American Pharmaceutical Association	Raymond W. Roberts, Pharm.D.
American Red Cross	Nancy McKelvey, M.S.N., R.N.
American Society of Hypertension	Norman M. Kaplan, M.D.
International Society on Hypertension in Blacks	James W. Reed, M.D.
National Medical Association	Otelio S. Randall, M.D.